

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Williams Olefins Geismar Explosion - 2013 - Removal Polrep  
Initial and Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VI

**Subject:** POLREP #1  
Initial and Final  
Williams Olefins Geismar Explosion - 2013  
ZZ  
Geismar, LA  
Latitude: 30.2358330 Longitude: -91.0505560

**To:**  
**From:** John Martin, OSC  
**Date:** 6/13/2013  
**Reporting Period:** 6/13/2013-6/14/2013

**1. Introduction**

**1.1 Background**

<b>Site Number:</b>	ZZ	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	CERCLA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	PRP	<b>Incident Category:</b>	
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	6/13/2013	<b>Start Date:</b>	6/13/2013
<b>Demob Date:</b>	6/14/2013	<b>Completion Date:</b>	
<b>CERCLIS ID:</b>		<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	
<b>FPN#:</b>		<b>Reimbursable Account #:</b>	

**1.1.1 Site Description** At 0837 hours on 13 June 2013, there was an explosion and fire at the Williams Olefins Geismar plant. As of 1700, Williams reported approximately 73 workers were injured and one fatality due to the explosion and subsequent fire. After the explosion, part of the plant continued to burn for several hours. Williams on-site response personnel fought and controlled the fire. The fire was extinguished by early afternoon, but the plant was without power and material (primarily propylene) within the process piping continued to vent to one of the plant flares where the material was partially combusted. The partial combustion was due to the inability to power air blowers and steam valves at the flare. As a result, a thick black smoke was produced, raising concerns for downwind residents and businesses. Many roads were closed near the facility, including LA Hwy 30 and LA Hwy 3115. LA Hwy 30 was reopened at approximately 1600 hours. Overnight the only remaining road closure was LA Hwy 3115 from LA Hwy 30 to LA Hwy 75 (River Road). Shelter-in-place orders were issued for surrounding plants, but were all lifted by 1800 hours on 13 June.

**1.1.1.1 Location** The Williams Olefin Geismar plant is located on Louisiana Hwy 3115 near Geismar, in Ascension and Iberville Parishes, Louisiana. The plant is located in an industrial area. The nearest residences are located approximately 2.5 miles northeast of the facility.

**1.1.1.2 Description of Threat** The Williams Olefins Geismar plant converted ethane to ethylene and propylene. The main chemicals on site were ethane, ethylene, propane, propylene, and butadiene. Some materials may have been released during the explosion and fire. The plant shut off valves to all units, but materials in the process piping, believed to be mostly propylene, continue to be vented through the facility flare. The explosion knocked out electricity at the facility, so the flare was not operating efficiently for much of the day resulting in a large plume of black smoke. By 1800 hours on June 13, some electricity had been restored to the flare, allowing the operation of fans which increased the combustion efficiency and eliminated most of the smoke.

Damage to a flange-pipe near the explosion site caused the extended release of small amounts of propylene into the air. Plant officials were unable to safely address the release due to uncertainty about structural stability in the blast area. In order to reduce the release to the air, personnel were positioned with a fire hose to continuously douse the flange with water. Plant officials conducted air monitoring inside of the plant near the damaged flange.

The nearest residents are located approximately 2.5 miles northeast of the facility. LDEQ and EPA conducted off-site air monitoring and air sampling in the neighborhoods downwind of the facility, but detected no readings above background.

Firefighting water was not contained on the facility due to the excessive amount of water utilized and the lack of electrical power to operate lift pumps within the plant drainage sumps. Firefighting water and potentially process water, was released into drainage ditches leading offsite. EPA measured the pH of the water in the drainage ditch on 13 June 2012 and found that it was 5-6, and no sheen was noted.

## **2. Current Activities**

### **2.1 Operations Section**

On 13 June 2013, EPA responded to the incident by mobilizing an OSC and START-3 contractors. The EPA Team assisted the Louisiana Department of Environmental Quality (LDEQ) with offsite air monitoring and sampling. LDEQ utilized an MSA Sirius 5-gas monitor to conduct air monitoring in residential neighborhoods downwind of the plant. The MSA instrument monitored for Volatile Organic Compounds (VOCs), Carbon Monoxide (CO), Oxygen (O<sub>2</sub>), Lower Explosive Limit (LEL), and Hydrogen Sulfide (H<sub>2</sub>S). LDEQ conducted daytime air monitoring activities while EPA conducted overnight air monitoring at the same locations as LDEQ. The EPA personnel utilized a MultRae 5-gas monitor to measure for VOCs, CO, O<sub>2</sub>, LEL and H<sub>2</sub>S. No readings above background were detected by either party.

LDEQ and EPA also collected air samples using Summa Canisters. LDEQ mobilized the Mobile Air Monitoring Laboratory (MAML) to conduct real time air sample analysis as well as to analyze air samples collected within Summa Canisters. The Summa Canisters were used to collect grab air sample from the residential neighborhoods downwind of the plant. The Summa Canister samples were analyzed in the MAML using the TO-15 analysis. No compounds were detected above background levels. Compounds analyzed by the MAML included NO, NO<sub>2</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub>, H<sub>2</sub>S, PM<sub>2.5</sub>, Non-Methane Organic Carbon (NMOC), Methane, and Total Hydrocarbons.

EPA, LDEQ, Louisiana State Police, Ascension Parish Office of Homeland Security, Williams representatives and an Occupational Safety and Health Administration (OSHA) representative attended responsible party briefings at 0730 hours and 1030 hours 14 June 2013. Williams reported that they conducted air monitoring activities around and downwind of the incident using LEL meters, and sites surrounding the damaged flange using six AreaRae monitors. Williams representatives stated that as of 1130 hrs on 13 June no LEL reading above 0% were detected.

EPA and LDEQ representative accompanied Williams representatives on a site walk to visually inspect standing water from fire suppression and process water activities. Due to the excessive amount of water used during the incident, and the inability to pump water from the plant sumps, water was observed to be

migrating off site near the northeast corner of the facility. On 14 June, EPA measured the pH of the water in the off site drainage ditch and found that it was 7, with no sheen noted. No visually contaminated water was observed migrating off site. No stressed vegetation nor animals were observed. Williams representative proposed that they would collect surface water samples from facility discharge points prior to the release of the water to offsite drainage ditches. LDEQ was in agreement with this process for future discharge of water.

As of 1000 hours on 14 June, 2013, LA Hwy 3115 was opened, and no roads remained closed. At 1100 hrs on 14 June 2013, LSP relinquished control of the incident to Williams and the EPA team departed the scene at 1125 hrs.

## **2.2 Planning Section**

**2.2.1 Anticipated Activities** All EPA personnel demobilized from the site after Williams personnel reduced the amount of material flared and emanating from the damaged flange to levels at which air monitors detected no VOCs and LEL readings were zero.

**2.2.2 Next Steps** EPA demobilized from the site on 14 June 2013. LDEQ will follow up with Williams on firefighting water runoff, permit and other state regulatory requirements. The LA State Police and LDEQ will monitor the situation as the plant begins start-up activities in the coming weeks.

**2.2.3 Issues** The cause of the explosion is not known. Regulatory agencies are starting an investigation into the cause of the accident.

## **2.3 Logistics Section**

No information available at this time.

## **2.4 Finance Section**

No information available at this time.

## **2.5 Other Command Staff**

No information available at this time.

## **3. Participating Entities**

EPA Region 6  
Louisiana State Police Emergency Services  
Louisiana Department of Environmental Quality (LDEQ)  
Ascension Parish Office of Homeland Security  
Occupational Safety and Health Administration (OSHA) Region 6  
Williams Plant personnel and contractors

## **4. Personnel On Site**

EPA personnel on site include On-Scene Coordinator John Martin and 2 START-3 contractors.

## **5. Definition of Terms**

No information available at this time.

## **6. Additional sources of information**

### **6.1 Internet location of additional information/report**

LDEQ's website and air sampling results: <http://www.deq.louisiana.gov/portal/WilliamsOlefins.aspx>

## **7. Situational Reference Materials**

No information available at this time.